

Community cohesion and inherited networks : a network study of two handloom clusters in Kerala, India

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Anant Kamath and Robin Cowan**

Maastricht Economic and social Research institute on Innovation and Technology (UNU-MERIT)
email: info@merit.unu.edu | website: <http://www.merit.unu.edu>

Maastricht Graduate School of Governance (MGSoG)
email: info-governance@maastrichtuniversity.nl | website: <http://mgsog.merit.unu.edu>

Keizer Karelplein 19, 6211 TC Maastricht, The Netherlands
Tel: (31) (43) 388 4400, Fax: (31) (43) 388 4499

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COMMUNITY COHESION AND INHERITED NETWORKS
A NETWORK STUDY OF TWO HANDLOOM CLUSTERS IN KERALA, INDIA¹

Anant Kamath² and Robin Cowan³

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ABSTRACT

When agents use informal interaction to exchange knowledge, their production relations may develop as emergent properties of their social relations and may exhibit homophily. The Saliyar community cluster in India is an archetype of this. A preceding study by Cowan and Kamath (2012) had shown how, by a study of this community, the conceptual understanding of social embeddedness needed to be expanded to understand these informal knowledge exchanges in environments of complex social relations. In this follow up paper, we see how the homophilous-embeddedness in the Saliyars' networks and an extreme sense of community cohesion worked its way by influencing a variety of economic and cultural factors and lessening the willingness to absorb innovations, driving the Saliyars into decline. We also see the mechanisms through which the absence of these attributes among the other socially-heterogeneous communities of weavers, such as in the Payttuvila cluster, stimulated their rise.

Community and family spirit have, more often than not, assisted and given its own shape to the technology trajectory of handloom in most of India. Community social capital has buttressed the risks of adoption of new technologies and practices in the past, and invigorated information flows. Hence, the 'standard line' in the literature sides with the idea that community cohesion has been, historically, congruent to technological progress and knowledge diffusion among community-based weaving clusters and groups in India. But in the case of the Saliyars there has been a disharmony. This does not question whether or not community social capital and technological progress share a healthy relation, but shows that there are limits beyond which the detriments of community social capital and rigidities associated with inherited networks set in, hindering knowledge diffusion and technological advancement. The Saliyars as a counter example to the 'standard line' demonstrate this.

KEYWORDS: Handloom, Networks, Socio-Technology, Cohesion, Homophilous-Embeddedness, Kerala

JEL CLASSIFICATION: O33, Z13

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² PhD Researcher, UNU-MERIT, The Netherlands

³ BETA, Université de Strasbourg, France; UNU-MERIT and Maastricht University, The Netherlands

1. Background

This is a follow up paper to Cowan and Kamath (2012), which provided propositions on expanding the conceptual understanding of social embeddedness through the study of two handloom textile producing clusters in Kerala state in southern India. In this paper, we see how homophilous-embeddedness – the conceptual contribution of Cowan and Kamath (2012) – in the Balaramapuram Saliyars' networks and an extreme sense of community cohesion worked their way by influencing a variety of economic and cultural factors and lessening the willingness to absorb innovations, driving the Saliyars into decline. We also see the mechanisms through which the absence of these attributes among the many other socially-heterogeneous communities of weavers, such as in the Payattuville cluster, stimulated their rise. We begin by asking the seemingly simple question – the concluding issue in Cowan and Kamath (2012) – of why Saliyars cannot simply amend their links.

So what does stop an individual in the Saliyar community from amending his or her links, especially when there is no animosity among communities? The answer lies in the community's perception of its social capital. The Saliyars treat their social capital almost as 'ethnic' capital; many in this community strongly believing that weaving is "in their genes" and a matter of "community pride". We know from the literature that social obligations are deep-seated elements in the everyday economic functioning of communities. Inherited production links cannot be amended easily and attempts to do so may be socially expensive since it may involve tampering with community relations and with investments made in the past by the community to maintain social ties and obligations specifically for economic purposes (Coleman, 1988; Borjas, 1992, 1995). 'Cultural values', which often materialize in economic links, are often transferred across generations purely for their survival and preservation (Wintrobe, 1995; Dasgupta, 2005). Many Saliyars who were interviewed for this study reported that links are ingrained into them as they grow up familiarising with suppliers and consumers (essentially members of their own community) arriving at home everyday, since childhood. The baggage of loyalty and communal obligation was relayed generation after generation, 'locking them in' from birth (Dasgupta, 2005). Information on links was directed by tradition, just as in a network 'clan' (Bianchi and Bellini, 1991).

The Saliyars recognized all this and it is based on this recognition that they have encouraged their children to quit the profession. In fact, during survey, many families proudly explained how many in the younger generation of Saliyars have dissociated with any stage of handloom and migrated out of Balaramapuram town. Many Saliyar families spoke with pride about how some of their children "cannot remain weavers in these precarious times" and have hence "settled very successfully in life" as doctors, engineers, and in other professions. Interestingly, despite the encouragement to move to other professions, most children were taught the basics of weaving at home during childhood since these skills are still treated as their community's heritage, even if not a lucrative career option.

Some expected problems with cohesive communities and ethnic enclaves – such as free riding associated with the public good nature of social capital, or isolation due to a different language – seem to have been bypassed in the case of the Saliyars. Free riding associated with the public good nature of social capital was averted due to a strong presence of numerous closed networks within the community (note the many triangles in the Saliyars’ networks), and consequently the inescapable monitoring of each individual by the community. Also, both Malayalam and Tamil languages are freely spoken by the majority of the population in an inter-state border region such as Balaramapuram town, which is populated by many native (non-Saliyar) Tamil speakers.

Also, it is not the case that handloom was an unprofitable industry. The ongoing sustenance of the Payattuvara Cluster and many other such small clusters in Balaramapuram town and Trivandrum district show that handloom (though plagued with numerous other problems such as fluctuations, competition from powerloom, unorganized production, defunct cooperatives, etc.) has enjoyed a modest level of success, having also acquired a Geographical Indication tag⁴ for the Balaramapuram *sari* and for four other textile products, and catering to a strong product demand state-wide and in upmarket showrooms across India. In fact the literature has demonstrated that a unit’s failings may not be organizational or due to shortcomings in the industry, but due to its position and affiliation to a cohesive and rigid network (Walker et al., 1997) – this seems to apply well to the Saliyars in the handloom industry, as has been revealed in Cowan and Kamath (2012), and as we will disentangle in detail in this paper.

The ultimate solution among the Saliyars to escape their inherited lock-in was to abandon weaving and, in the long run, move away from the handloom industry altogether. But one must keep in mind throughout this paper that this analysis of the Saliyars is not about why they moved from weaving to other professions; it is about the cause of their decline in the handloom industry at Balaramapuram, the root of which is found to be community cohesion and homophilous-embeddedness in their networks. This is not so much about why other professions appeared more promising, but how the Saliyars reached a dead end in weaving – their hereditary profession.

We organize and unpack these arguments by first presenting the ‘standard line’ that *community social capital has been central and congruent to technological progress in the handloom industry in India throughout the centuries. One consequence of this argument or claim is that the Saliyars, the exemplar in community bondage among weaving communities in Balaramapuram, should have actually progressed.*

This is supported by the fact that since weaving as a full time activity in handloom-engaged households in Kerala is pursued with an intensity no lesser (and at times greater) than in India as a

⁴ A Geographical Indications (GI) Tag and its associated Geographical Indications of Goods (Registration & Protection) Act 1999, that India enacted as part of the WTO’s TRIPS agreement, ensures that a product originating in and associated with a certain geographical region (such as ‘Bordeaux wine’ to the Bordeaux region in France, or ‘Darjeeling Tea’ to Darjeeling in India), is not produced elsewhere outside the region.

whole (shown in section 2.2 of this paper based on data from NCAER, 2010), the Saliyars are not specially disadvantaged in the industry or in the region they are operating from, and should not out-migrate for good but rather exercise a flexibility to exit and re-enter as other communities have done in other states in India (see Mamidipudi et al., 2012). Using an analogy by Mamidipudi et al. (2012):

“...jumping off a home ship that is carrying too much load in bad weather, and swimming alongside on their own steam, till fair weather allows [weavers] to hop back on. There are casualties, of course, but the ship continues its journey, ferrying people from subsistence to sustainability.” – pp.47, Mamidipudi et al. (2012)

While there are a multitude of cases in history demonstrating healthy relationships between community cohesion and technological progress among handloom weaver communities in India, in the case of the Saliyars the relationship over time, became unfortunately, antagonistic and unhealthy. The Saliyar out-migration from the industry in Balaramapuram has been permanent, and unlike the analogy given by Mamidipudi et al. (2012) above. To understand why the Saliyars are a counter example to the standard line in the literature in more ways than one, we are compelled to investigate into the inherited nature of Saliyar networks, the centrality of community social capital among the Saliyars and homophilous-embeddedness in their networks.

In this paper, we first lay out in detail, in section 2, the standard line mentioned above. This is done by first adopting a perception of handloom as a socio-technology and the weaver as a socio-technologist, as well as by reviewing the evidence in the literature on the congruent relationship between family/community centrality and technological progress in the handloom industry, in section 2.1. This is then followed by a discussion in section 2.2 using data from NCAER (2010) and MoT (2012) that compel us to believe that since participation in weaving in Kerala has fared quite similarly to India in general, the Saliyars operate in an environment that is no more disadvantaged than the rest of India, and hence need not really permanently exit from the industry. Section 3 then moves on to investigate what roles centrality of community social capital among the Saliyars, and homophilous-embeddedness in their networks, have played in their decline. In order to investigate into this, we first look, in section 3.1, at the plethora of schemes and programmes that the State, from the central as well as state governments, provided to the handloom industry in order to fuel its progress and growth. We then see in section 3.2 how the Saliyars did not participate in these, by excluding themselves from organizational innovations, how their design information entered a long-term phase of redundancy, and how issues of land subdivision plagued the sustenance of their functioning. As a parallel, in section 3.3, we see how the absence of the possibility of community cohesion, and flexibility in networks, fuelled the rise of the other heterogeneous communities in Balaramapuram. In section 4, we conclude.

2. The Standard Line – The Central Place of the Social in Technological Progress in Handloom

The literature on historical trends in India has shown that community cohesion and the adoption of innovations have always played a *symbiotic*, and not an antagonistic, role in the handloom weaving industry. To better understand this, we must first adopt the perception of handloom as a ‘socio-technology’ and the weaver as a ‘socio-technologist’ – a view expanded upon recently by Mamidipudi et al. (2012) in their analysis of weaver mobility in Andhra Pradesh state in India.

2.1 The Handloom Industry: A Family- and Community-Based Socio-Technological System

Mamidipudi et al. (2012) allege that there has been some unfairness in characterising handloom in India as static, traditional and outdated. Their recent study on handloom weavers in Andhra Pradesh has challenged this notion, and though their study is not exactly pioneering in this aspect⁵, it provokes us to re-appreciate the argument that the handloom industry must be studied as an elastic and evolving *socio-technological system*. Technical functions in the industry are well-rooted within the structure and functioning of community, and the coexistence of the two is inevitable.

“Each weaving family...is linked to another five families through the auxiliary activities of dyeing, warping, sizing and winding. The weaving system is further linked to dyeing, credit and marketing through hybrid institutions that link rural and urban environments. This builds a complex socio-technical and economic network that weaver households maintain and by which they are maintained” – pp.50, Mamidipudi et al. (2012)

Weavers realize, according to Mamidipudi et al. (2012), that their performance and technical expertise in almost every stage of production is correlated with their investments in their social relations and in building social networks. The recognition that they speak a common technical and social vernacular has prompted weavers to mobilize knowledge within their social networks. By virtue of this, the weaver becomes a socio-technologist. This is demonstrated with the evidence from the literature on the history of technological progress in the handloom industry, i.e., innovation and knowledge diffusion in handloom has always revolved around the community, and has for the most part been positively stimulated by community social capital. We develop the standard line in our analysis based on this argument, by reviewing the historical experience drawn from works primarily by Tirthankar Roy and Douglas Haynes. It is against this standard line that the experience of the Saliyars of Balaramapuram is examined in this paper.

There is a common misconception at times on handloom in India, which involves a pastoral notion of handloom textile production as an individual activity performed by rural weavers in a rustic (and more or less static) setting. Haynes (2001) argues that handloom has always been a dynamic industry, characterized by frequent innovation and mobility of weavers; it has also always been a

⁵ As we shall see very soon while looking at the literature’s appreciation of role of community in technological progress in handloom in India.

community based industry, with entire communities regarding this economic activity as their traditional profession. That is, handloom in India has been characterized by the household-based weaving family working not alone but embedded in a community-based cluster that considers weaving (and generally handloom textile production from start to finish) as a community's heritage and not simply a family activity; the community being the agency through which innovations have filtered into the industry. The weaver or weaver family historically has not really existed outside of community, a fact valid even to this day, where weaving in many regions such as northern Andhra Pradesh is still community and caste based at its core (Mamidipudi et al., 2012). And in terms of adoption of weaving innovation too, the first adopters of innovations (such as electrification and modernization of weaving, pre-loom, and post-loom processes) have often been artisan communities drawn from hereditary weaving 'castes' (such as the migrant *Padmasalis*, *Khatris*, *Koshtis*, and the Muslim *Momins* or *Julahas*) (Haynes, 2001; Roy, 2002).

The central place of caste in handloom has, according to Roy (2002), long been recognized in Indian policy, even during the British Raj. Roy explains that many innovations that were intended to be introduced top-down by British administrators in India required population estimates of craftsmen in handloom regions, estimates which could be unearthed only through regular *caste* censuses (and not industry surveys, as would be the case in many other sectors).⁶ Also, according to Roy (1996), caste shared one (and probably only one) feature of the European guild – exclusive unity, which encouraged collective information sharing among members and hence diffusion of new information within.⁷

Let us look at Roy's development of this argument a little closer. The nuances of production in handloom were known only within certain castes and the communities and clusters that were based on these castes, which provided (and still does provide, though in a reduced capacity) a social bond and distinct identity that influenced its members to channel profit to the common good by building community centres, temples, and so on. But very often, it also obliged members to share technical information and teach their progeny the profession that the caste was associated with, assist others in the community with production and technical problems, and at the same time restrict outsiders from all this. Learning in handloom had a "strong apparent correlation with collective social identity" (Roy,

⁶ One could put forward the argument that the justification for caste censuses (as opposed to general population censuses or industry surveys) may be weak since weavers may generally belong to particular castes, but *all* members of that caste may not weave. There is some truth in this argument, but one must bear in mind that there was on the other hand a slim chance of finding weavers in other castes, especially during the period in history involved here. Hence, a pragmatic way to have captured demographic information of weavers was to conduct surveys in and around weaver *castes*, even if all caste members were not weavers. We provide evidence later in this paper (from Venkataraman, 1935) that even until the middle of the 20th century, and despite the slow breakdown of caste and community monopolies in various occupations during the British Raj and after Independence, a large majority of weavers and handloom textile producers continued to hail from hereditary weaving communities.

⁷ Roy (1996) does not fail to point out that this may also display a sense of exclusivity, which may discourage innovations from outside. We see this clearly in the later discussion on why the Saliyars fell behind from the 1980s.

2002: 527). Cooperation, trust, assistance, and learning were all hence in the hands of informal channels of communication demarcated by the social boundary of caste and community.

Even when things slowly began changing in India after the 1860s with the introduction of organizational innovations in the handloom industry such as the workshops with paid labour (the *karkhanas*) and formal systems of production of handloom cloth and delivery for export markets (primarily Britain), the family/community based economy fought to stand strong and resilient. Haynes (1996), who has studied this in detail, says that the reason was the fear among weaver communities of disruption of traditional production and delivery systems, and also a disinterest in the merchant capitalist system introduced by the British system on the grounds that surplus creation would be hindered. In fact, the centrality of the family and community in weaving was always resilient, evident in English records dating to very early periods such as the late 1700s, which detailed rather meticulously how tedious it was in the beginning for the merchant (a new face on the handloom scene at the time) to penetrate long existing community networks and caste hierarchies and enter into direct relationships with weavers (Arasaratnam, 1980). It took much longer than the British had expected to get direct access to (and therefore control of) the weavers. A sense of community was so strong that weavers were known to simply evacuate entire villages and migrate to other towns to set up production whenever their community structure and relations were under threat by the new systems that the British had introduced. Though Arasaratnam (1980) does not provide details of which communities exactly did this, he puts forward a very interesting argument that the weaver responses of the 1770s and 1780s in South India around the Carnatic region (most of modern day Karnataka, Andhra Pradesh, and Tamil Nadu states) were the first popular reaction against British rule in India. His work provides a detailed account with case studies of an almost complete embeddedness of production relations in caste relations, in villages on the Coromandel Coast (south western coast of India), and how, at times, social heads of communities, who had absolutely no role in pre- or post-loom activity administered over the community's production activity simply because they were heads of caste.

The emergence of caste associations, sometimes even as formal registered institutions, were the direct consequences of weavers migrations from the villages in southern India to larger towns such as Sholapur and Bombay in Maharashtra state, which, Roy (1999) explains, served as an important feature of the strategy of migrant weavers to “establish themselves economically and redefine themselves socially” (pp.72). Re-creation of community and regeneration of roots characterized these migrant weaver communities, who faced a need to collaborate and create a ‘common good’, but at the same time compete (Roy, 1999).⁸

“The very maintenance of a history of having moved from another place, often under conditions of duress, served to demarcate them from others around and to sustain their sense of distinctiveness.” – pp.66, Haynes and Roy (1999)

⁸ This is reminiscent of the concept of ethnic enclaves.

Often, these migrations, and the final destinations of these migrant weavers, were assisted and directed by well-to-do patrons with political acquaintances. Weaver communities would have only welcomed this, according to Haynes and Roy (1999), as patronage by nobility and migrations of weaver communities were symbiotic: clothing being a means of defining the status of the nobility and attracting British favour, and association with the aristocracy bringing the weavers social and ritual privileges over and above what they had been endowed by the caste system.⁹ It has been noted that through all the migrations, the organizational structure of these weaving communities changed only very slowly, with community identity at the centre at all times.

Even a significant transformation in the handloom industry – the arrival of the workshop, or *karkhana*, with employed wage labour working on tens of looms under one roof – still revolved around community and family. What was very interesting about this organizational innovation was that for a long time it did not displace the family/community system, rather it grew alongside it (Haynes, 2001). According to Haynes, who documents in detail the entry of workshops in the industry, the family slowly began incorporating the management of the workshop and marketing of produce into its existing division of labour. Venkataraman (1935) explains that initially, of course, the introduction of the workshops placed in front of the traditional family/community system an unfamiliar work environment that involved specific work hours, punctuality in arriving at work every morning, wages on a monthly basis for senior workers and on a piece-rate basis for weavers, and so on. This may have caused workshops to appear, at first, unattractive to ‘caste-weavers’ (i.e., those weavers for whom it was a hereditary community profession) and attractive only to those who belonged to non-weaver castes. This was the case, Venkataraman documents, in northern Kerala in the early decades of the 20th century. However, in regions such as central Tamil Nadu state (which was, like western India, a thriving weaving centre in the subcontinent) caste-weavers were still dominant as workers in the workshops and *karkhanas* that developed there. Caste and community monopolies in various artisan and other occupations in India, which underwent an eventual breakdown during the British Raj, did not seem to affect the handloom industry very much, as seen in the Madras Presidency (comprising most of southern peninsular India) where for over two-thirds of weavers, handloom textile production continued to be an entirely hereditary and community-centred activity (Venkataraman, 1935)¹⁰.

So, though the wage labour was supposedly from outside the ‘family’ in the *karkhana* system, it was actually sourced mostly from within the community through informal networks of kinship,

⁹ This is very similar to the Saliyars of Balaramapuram, though they migrated at a much later period and not out of circumstance but out of invitation of the Maharaja of Travancore, under whose patronage they worked. The Maharaja on the one hand invited them to ensure his supply of Saliyar-woven high quality clothing, and the Saliyars on the other hand, with his patronage, lived a lifestyle and observed community practices that were much higher than what the caste system had traditionally accorded them.

¹⁰ Venkataraman finds that the *Kaikolars*, *Devangas*, *Salés* (not related to the Saliyars at Balaramapuram) and *Sourashtras* were still the dominant weaving communities in the Madras Presidency, well into the 20th century after the large-scale producing workshops began seeping into the handloom industry.

friendship, and neighbourhood (Haynes, 2001). The very fact that the workshop coexisted alongside with the family/community system is what laid the path to the adoption of one of the most significant innovations in the textile industry in India – the fly-shuttle loom – in the late 1800s and early 1900s. Innovations such as the fly-shuttle loom found favour, albeit slowly, among weavers in regions such as western India since they did not appear to disrupt the division of labour in weavers' families. It is of interest to note that this innovation was adopted by many well-off weavers households in western India much before the formal top-down introduction by the British (Haynes, 1996), only after which did it eventually move into the workshops on a much larger scale. The workshops adopted these new technologies into their scheme of activities slowly and carefully, testing out their impact not only on fluctuating market conditions but also, importantly, on existing family and community relations. The progress from pit- to fly-shuttle-, and in some cases even to power-loom, was using this cautious and meticulous approach, attempting to maintain the long existing division of labour based on family and community. According to Haynes' (1996) assessment, division of labour in 1940 (when the workshop form of production was strongly developing and operating almost entirely by fly-shuttle loom), was in fact not very different to that which existed in about 1900 (when these large process and organizational innovations were only being introduced). In fact, even in Independent India, by the 1960s, it was found by surveys and policy reports such as one by the Planning Commission (GoI, 1967) that the principal establishment in the handloom industry in India was still the weaver household and the principal workers of the industry were still weaver families. So handloom remained for the large part, even in the late 1960s, as a hereditary and community-based industry.

“...handloom weaving is a hereditary industry where the son learns from the father the techniques of weaving...The handloom industry belongs to the traditional community of weavers...Even after the advent of modern techniques and the growth of cooperative institutions the hereditary nature of the industry has hardly changed” – pp.17, GoI (1967).

Hence, whether in migration or in the adoption of organizational and technical innovations, family and community has always been the pillar around which handloom has developed in most of India. In fact, we have seen in the literature that very often, adoption of these innovations were through the route of family and community, even as far as ‘externally’ hired wage labour in the workshops went. When crises arose time and again in handloom in India – as during the middle and later parts of British rule – it was due to various other factors¹¹, least of all the traditional family and community system.

¹¹ According to Roy (1993), stagnation in handloom weaving in rural India was rearing its head by the late 1800s. The rural weaver was known to be the first to suffer in times of famine, something that the literature has always cited. The industry in rural India had in fact severely declined between 1850 and 1900, attributed by Roy to factors such as increasing inequality and polarization among producers, the urbanization of looms (town weaving being always more progressive than rural), and so on. However, cloth production from handloom in India as a whole was said to actually begin growing, post 1900.

To reiterate the argument that sets the standard line in this analysis, community social capital and technology have reinforced each other very often favourably and have shared a more or less symbiotic relationship in the handloom industry in India. If this is the case, it should therefore follow that for the Saliyars of Balaramapuram too, especially by virtue of being a migrant weaver community with official patronage and a multitude of other social and economic benefits, this harmony should have been long lasting, even until today. But this has not been the case. So can the sustained downfall of the Balaramapuram Saliyars, even today, be due to bad industry conditions in the state? Is handloom a sick industry in Kerala, and due to this, is weaving not the preferred activity for handloom-engaged households in the region? We review this in the following section.

2.2 *Participation in Weaving in Kerala, compared to India on average*

The handloom industry in India, as well as in Kerala state, is known for its uncertainties and fluctuations, as seen in production trends in Table 1. But if we compare the situation in Kerala to the general situation across India, we see that many aspects *participation in weaving* in Kerala have fared quite similar to India in general. This prompts us to believe that the Saliyars operate in an environment that need not really necessitate a permanent exit from the industry. Interestingly, we shall see from this section that despite high fluctuations in the industry in Kerala, participation in weaving in Kerala has been similar, or even better, than in India in general. We support this argument based on information in the *Handloom Census of India 2009-2010* (NCAER, 2010), a very comprehensive and broad ranging report on various aspects of the handloom industry in India. This is the third such census to be produced in India, the second having been undertaken in 1995-96 (hence the frequent reference to this year) and the first in 1987-88.

Table 1: Production of Cloth in the Handloom Sector in India and Kerala state

Year	Production in India (in million square metres)	Growth in Production in India (per cent)	Production in Kerala (in million square metres)
2002-03	5980	-	70.75
2003-04	5490	-8.19	56.82
2004-05	5722	4.23	-
2005-06	6108	6.75	62.38
2006-07	6536	7.01	62.48
2007-08	6947	6.29	70.88
2008-09	6677	-3.89	20.20
2009-10	6806	1.93	23.95
2010-11	6949	2.10	-

Source: based on Table 3.3 in MoT (2012) and GoK (various)

Let us first look at handloom at an all India level. At an all India level, the majority of households associated with handloom cloth production are actually engaged at the weaving stage. This is a large majority of around 82 per cent (numbering around 2.27 million households). Also,

most of these households, and the individuals weaving in them, are not aged members of the family practicing an outmoded economic activity; in fact, 70 per cent of the workforce is in the age group 18-45. Though the population of weavers in India may have slightly declined from 3.3 million in 1995-96 to 2.9 million in 2009-10, the proportion of *full time* weavers among the total population of weavers has actually jumped from around 44.3 per cent to around 63.5 per cent; this goes along with a decrease in the number of idle looms among total looms in the country from 10 per cent in 1995-96 to 4 per cent in 2009-10. Table 2 displays these and a few other indicators that show progressive figures. With these figures, we can judge that even if the handloom industry faced fluctuations over the period 1995-96 to 2009-10, weaving itself has not become a redundant activity, to permanently move out of.

Table 2: Comparison of Selected Indicators (for India) from the Second and Third Handloom Censuses

Indicator	Second Census (1995-96)	Third Census (2009-10)
Man Days worked per Weaver	197	234
Share of Full Time Weavers to Total Weavers	44 %	64 %
Share of Idle Handlooms	10 %	4 %
Share of Weaver Households reporting less than 1 metre of production per day	68 %	46 %

Source: Table 10.15 in MoT (2012)

Let us now move to some closer aspects. The data is available at the state level for Kerala and at the all-India level, but not at the district level for Kerala which is rather unfortunate as it prohibits us to view the situation in weaving in handloom at three levels – country, state, and district. With this limitation in mind, we move to Table 3, which shows that the proportion of weaver households¹² among total handloom-engaged households is very much the same in Kerala as it is in India.

Table 3: Weaver or Allied Households as per cent of Total Handloom Households (2009-2010)

Location	Weaver Households (per cent)	Allied Households (per cent)	Others (per cent)
Kerala	81.80	18.04	0.16
India	81.49	14.05	4.46

Source: own computations based on Table 3.1 by NCAER (2010)

¹² A *weaver household unit* is defined by NCAER (2010) as “one that has any member of the household who operated a loom even for one day in the last one year (preceding the survey date), either within the premises of the house (classifying the household as a ‘with loom household’) or outside the household premises (classifying the household as ‘without loom household’). On the other hand, an *allied worker household unit* is defined by this census as “one that has any member of the household who has undertaken pre-loom (dying of yarn, warping/ winding, weft winding, sizing, testing, etc.) and/or post-loom activities (dying of fabric/calendering/printing of fabric, made ups, etc.), even for one day in the last one year (preceding the survey date), either within the premises of the house or outside the household premises. These households did not have any members engaged in weaving activity within or outside the premises, nor did they have a loom within their premises.” NCAER (2010), pp.6

And if we take a look at the workforce among households engaged in handloom, we see in Table 4 that the proportion of weavers among total handloom workers in households is around three-fourths, well past an absolute majority, in both Kerala and India in general. In fact, Kerala even enjoys a very slightly higher proportion of weavers in handloom households, than in India on average.

Table 4: Proportion of Weavers and Allied Workers to Total Workers in Handloom in Households (2009-2010)

Location	Proportion of Weavers (per cent)	Proportion of Allied Workers (per cent)
Kerala	76.97	23.03
India	75.61	24.39

Source: own computations based on Table 4.2 by NCAER (2010)

But a question that arises is whether these weavers, who seem to comprise the majority of handloom workers in Kerala as well as India, are engaged only on part time basis. If this is the case, we can be wary of the figures in Table 4 and judge that the industry is filled with individuals who weave as an activity only on the side, among other economic activities that may be more rewarding. But Table 5 refutes this, as we see that almost the entire population of weavers in Kerala work full time in this activity (as do allied workers, and handloom workers in general).

Table 5: Handloom Workers by Nature of Engagement as per cent of Total Workers in each Category (2009-2010)

Category of Worker	Engagement	Kerala (per cent)	India (per cent)
Handloom Workers	Full Time	97.37	64.26
	Part Time	2.63	35.74
Weavers	Full Time	99.02	63.49
	Part Time	0.98	36.51
Allied Workers	Full Time	91.84	66.42
	Part Time	8.16	33.58

Source: own computations based on tables 4.9, 4.10 and 4.11 by NCAER (2010)

In fact, this proportion is much greater in Kerala than in India on average (where it is 63.5 per cent). Also, there are more part time allied workers than part time weavers in Kerala, suggesting that weaving in Kerala enjoys a greater full time participation than allied activities in handloom production.

Another indicator we can use to judge participation in handloom activity in Kerala is the number of workers in various categories of days worked per year. Here, in Table 6, we can see that this is the only indicator where Kerala performs a little below India on average, as the maximum proportion of handloom worker households (out of total – weaver and allied – households) feature in the category of 201-300 days worked per year, compared to the >300 category for an all-India level.

Table 6: Proportion of Handloom Worker Households by Number of Days Worked Per Year (2009-2010)

	<7	7-50	51-100	101-150	151-200	201-300	>300
Kerala	0%	1.08%	1.41%	3.14%	12.03%	61.97%	20.38%
India	0%	2.92%	15.49%	14.47%	16.30%	24.21%	26.55%

Source: based on Table 4.15 by NCAER (2010)

On a parallel, we can also see in Table 7 that the average number of person days worked per year in Kerala by weavers is actually more than that of allied workers, though the situation is the reverse for India as a whole. More broadly, the average person days worked per year by a handloom-engaged household is greater in Kerala than in India on average.

Table 7: Total and Average Number of Person Days Worked Per Year (2009-2010)

	Average Days per Handloom-Engaged Household	Average Days Per Weaver	Average Days Per Allied Worker
Kerala	296	246	214
India	264	183	217

Source: based on Table 4.13 by NCAER (2010)

We now move to a critical indicator of participation and performance of weaving households among handloom-engaged households: the average earning per annum. Table 8 shows, very clearly, that weaver households in Kerala reported greater average earnings per year than allied households in the state, and far greater than either weaver- or allied households at an all India level.

Table 8: Average Earnings of Weaver and Allied Households Per Annum (2009-2010)

		Weaver Households (Rupees per year)	Allied Households (Rupees per year)
Kerala	Rural	43,823	38,205
	Urban	31,242	29,571
	Total	41,198	34,496
India	Rural	38,260	29,693
	Urban	33,038	27,194
	Total	37,704	29,300

Source: based on Table 6.7 by NCAER (2010)

Hence, handloom – and particularly weaving – in Kerala has fared no worse than in the rest of India, and in some aspects even better.¹³ Fluctuations in demand and other such problems plague the handloom industry as much as any other traditional industry in India, but weaving as a preferred profession in this industry has not taken a setback in Kerala. In Balaramapuram too, weaving as a

¹³ Though Kerala in some indicators shows a greater participation and intensity in weaving compared to an all-India level, it is by no means the primary handloom weaving state in India. Other states such as Andhra Pradesh, Maharashtra and Tamil Nadu have far larger weaving industries compared to Kerala, in terms of output, export, etc. Evidence supporting this is replete in NCAER (2010).

profession has survived among socially-heterogeneous clusters of weavers who face the same industry conditions – good or bad – as the Saliyars. If pre- and post-weaving processes, or even non-weaving alternatives, were more attractive than weaving in Kerala, there should have been a mass migration of communities out of weaving. But this has not been the case. Even if there has been a general out-migration towards other professions, it may be in the manner that was expounded by Mamidipudi et al. (2012) where exit from and re-entry into the profession characterize the migrations in and out of the industry. Weaver communities such as the Saliyars in Balaramapuram should not, ideally, have quit permanently but rather have exercised a flexibility to exit and re-enter the profession such as what traditional weaver communities in other states in India have been doing. That is, they should have actually shown resilience whereby they move off the profession in bad times, but re-enter when conditions are better.

Mobility such as this, according to Mamidipudi et al. (2012), is the very function maintaining the stability of handloom weaving and sustainability of the networks it operates within. So why did the Saliyars, operating in a state whose participation in weaving is not worse off than the rest of India (and also having the advantage of a Geographical Indication Tag for the Balaramapuram *sari* and four other textile products, with Intellectual Property protection for ten years), choose to follow a one-way exit? This study argues that it matters only second whether the industry is performing well or not, as affiliation to a rigid network and traits of homophilous-embeddedness in the network can weaken even a seemingly prosperous community, even if operating in a modestly performing (or maybe even well performing) industry.

3. Understanding the Counter Example – the Saliyars of Balaramapuram

The Saliyars are evidently a counter example to the standard line, and to understand why, we invoke the principal finding in the network study in Cowan and Kamath (2012) – the presence of heavy homophilous-embeddedness in the Saliyars' networks, relative to the networks of the other socially-heterogeneous communities (such as Payattuville). The property of homophilous-embeddedness in a network delivers its outcomes in a convoluted manner, working its way by distributing its implications on a range of economic and cultural factors. To compare with the Saliyars, we sketch how the other, socially-heterogeneous, communities in Balaramapuram, who are currently enjoying a reasonable level of success, surged ahead over the decades primarily due to the absence of community cohesion and homophilous-embeddedness in their networks.

But before drawing these paths, we first trace the events that transpired in the handloom industry in Balaramapuram, around the Saliyar Cluster, in the 1960s and 1970s, from whence the Saliyars reported that their decline commenced. We describe as follows a series of massive policy-prescribed developments from the 1960s onwards in the Indian handloom industry. It is after describing the policy efforts that we sketch the path through which the Saliyars' homophilous-embeddedness and their community cohesion have worked their way through an assortment of

mechanisms in the economic choices and functioning of the Saliyars over the last four decades, bringing the community down to their current deteriorated condition, and ensuring a long-term status to their condition.

3.1 State Support for Organizational Innovation and for Development and Diffusion of Innovative Design

To trace the paths that the effects of homophilous-embeddedness and community cohesion have taken, we have to understand a crucial element in the functioning of this industry. The purpose of the discussion that follows is to describe this, and provide a taste of the various schemes and programmes developed by the State to serve this element, as well as in modernize the industry and plan efficient networks for innovating and diffusing new information. Many of these were opted out of by the Saliyars, in order to maintain their rigid networks and community cohesion.

Recalling from Cowan and Kamath (2012), production technology in *weaving* in this industry at Balaramapuram has remained essentially unchanged for around a century now; and if there have been modifications at all, they have been only incremental and only for a few pre-loom activities such as spinning and winding/warping. The demand for the Balaramapuram variety of handloom textiles, to reiterate, finds its basis on the antiquity of production technology in weaving. The fly-shuttle loom was introduced in India about a century ago as an improvement over the pit loom, but both technologies operate side-by-side in this industry in Balaramapuram, each used for different products. But despite weaving technology having remained more or less constant, knowledge has not remained static, and information networks have always occupied a decisive position in the industry.

The knowledge that circulates in these information networks revolve around the most central element – *design*. Success, according to Saliyar community members and weavers at Payattuvara who were interviewed, is said to befall to those who have quick access to information on the demands and trends in innovative designs. The individuals or groups who surge ahead are ones who have access to vital nodes in the information networks (such as the influential information actors, IIAs, referred to in Cowan and Kamath (2012)) that carry the knowledge on innovative design and the method of producing these designs on the cloth. This was in fact recognized by the State, even in the 1950s, the first decade of policy planning in India after Independence. The government, at both Central and State levels, felt the need to intervene in all three sectors of the handloom industry – cooperative societies, master weavers, and individual households – to promote design development and to universalize speedy access to innovative designs. The Government of India sought to do this by establishing two Institutes of Handloom Technology (IHT's – one in Varanasi in north India and another in Salem in south India) and several Weavers' Service Centres (WSC's – located all over the country), who were in turn advised to connect directly to the weavers and workshops in their respective region. The locations of the WSC's were very carefully chosen in each state, ensuring proximity to the weaving hubs in the state. The government pursued the regular revision and reorganization of syllabi at the

IHT's which were at the apex of design development in the country, and which were to deliver the innovative designs to the WSC's through regular short term training courses and exhibitions.

“...the Weavers Service Centre will be the nerve centre for the design development and the training of the weavers in the area for improving their output and enabling them to earn more...” – pp.23, MoC (1974)

The WSC's were instructed to maintain close contact with exporters and privately owned marketing organizations for information on modern fabric development, changing fashion demands, and other information. The IHT's and WSC's were to serve, in the language of our analysis, as state-led IIAs to assist in the efficient and ubiquitous diffusion of design information in their respective regions. The path that was charted for information on new design innovations was from the IHT's to WSC's, to proximate master weavers and cooperatives, and then to the individual households who were connected in some capacity to the master weavers and cooperatives. This was not without constant feedback between these actors and other significant private players in the industry.¹⁴

Besides this, the government also promoted modernization and design development services for individual weavers who were outside the cooperative and master weaver fold, as well as for underperforming master weavers. A 'High Powered Team on the Problems of Handloom Industry' (whose report is MoC, 1974) had in this regard recommended the organization of twenty five units each comprised of around 10,000 handloom weavers outside of the cooperative and master weaver fold in handloom hubs around the country to receive training in new design, receive credit from nationalized banks, benefit from marketing of output, and strengthen linkages to WSC's.

In line with these propositions, by 1976, a Common Facility & Design Centre for weavers was set up in Kerala, in Balaramapuram. This had the explicit intent of promoting design innovations, providing training to weavers in design and technical advice in dyeing, printing and other pre- and post-loom processes (GoK, 1976). This had its roots not only in the vast programmes for handloom development discussed earlier, but also in the Government of Kerala's contribution to the Twenty Point Programme announced by the Prime Minister of India in 1975. The state government had proposed two projects in Kerala (in the north in Kannur district and in the south in Trivandrum district) for the intensive development of the handloom industry in the state, under the management of Hanveev (The Kerala State Handloom Development Corporation Ltd.). These projects were infused with funds as large as Rs. 1.85 million (in 1976 terms), mostly with assistance from the Government of India. This involved the organization of almost one hundred workshop type weaving units, the establishment of one hundred collective weaving centres, and their linkage with the two WSC's

¹⁴ There are today five IHT's (rechristened IIHT's – Indian Institutes of Handloom and Textile Technology) in Varanasi, Salem, Guwahati, Jodhpur, and Bargarh, as well as 25 WSCs in almost all the states. In addition to the IIHT's managed by the Central Government, there are, in addition, four handloom design and technology institutes managed by the state governments, in central and south India, including in Kannur in Kerala. There is also a National Centre for Textile Design (NCTD) at New Delhi.

training centres in the state for design evolution and other technical issues (GoK, 1976). In the same decade, a large volume of funds (to the tune of Rs.11 million in 1976 terms) in the form of cash credit was injected as working capital under the scheme of the Reserve Bank of India (the country's central bank), targeted not at household weaving units but primarily at those who were under the cooperative or the workshop/work-shed form of organization (GoK, 1978). For individual weavers, commercial banks were directed, under the supervision of Hanveev, to provide aid under differential interest rate schemes; but this was marginal compared to the influx of funds mentioned above. Rs.1500 was arranged as loan assistance to each of the 6000 individual weavers selected; this being a very tiny fraction of the number of household-based weaving units in the state. These projects and the financial assistance that it brought along were continued beyond even the mid-1980s in Kerala (GoK, 1986).

In this manner, for around three decades – the 1950s, 1960s and 1970s – there was intensive involvement of state support in this industry, concentrated in around the handloom hubs in each state in India, including in Balaramapuram in Kerala.

Though a variety such recommendations were provided by the Central and State Governments with regard to innovation and diffusion of design information, it was found by a study by the Planning Commission (GoI, 1967) that the fastest tappers and absorbers of new design information in the industry during the late 1950s and early 1960s were those who had also absorbed and implemented organizational innovations: namely the cooperatives and, more importantly, the *master weavers* and the *workshops*. It was revealed also by MoC (1974) – the report by the 'High Powered Study Team' – that though the *cooperative* mode of organization was promoted by the government¹⁵, the bulk of design development, the element that fuels the progress of the industry, came from the private sector, namely the master weavers who operate workshops and work-sheds, who were in close association with design development centres that were developed by the government during the 1950s and the 1960s. It was the master weaver, in other words the one who adopted the *workshop* or *work-shed* mode of organization, who was said to have played a leadership role in design innovation. Brief attempts to discourage this mode of organization from some quarters in the government (based on some accounts that there was rampant labour exploitation in these work-sheds and workshops) were put down consequent to surveys which revealed that:

“...it would be a serious mistake if at the present stage of development we try to abolish this [master weaver] sector...Till the cooperative sector is sufficiently developed and is able to give full service to its members and come up at least to the level which the master weavers have reached, it will be against the interests of weavers [for the State] to interfere with this sector” – pp.12, MoC (1974)

¹⁵Eapen (1991) explains how very active state involvement was made from the mid 1950s onwards when the handloom industry was assigned a major role in planned national development. The *cooperative* form or organization was given thrust by the Government of India, channelled through the State Governments, by contributing to the share capital of cooperatives and providing other financial assistance through loans and cash credit arrangements.

In fact, even the earlier Planning Commission study found (GoI, 1967) through their analysis of a small sample of workshops in key handloom producing regions (such as Andhra Pradesh, Tamil Nadu and Maharashtra) that it was the workshops, more than the individual households, who effectively adopted many of the innovations in the industry.

“...all of the 11 workshops had adopted one or more types of improved implements. Among different improved implements varnished/wire heads were adopted by all the workshops; steel reeds and warping machines in 9 out of 11 workshops. The majority of workshops adopted dobbies/jacquards and take-up-motion attachments...” – pp.32, GoI (1967)

Independent households (which, according to this study, as seen at the end of section 2.1, constituted the bulk of the industry) did absorb some innovations. But they evidently lagged behind households that had embraced the other innovative forms of organization – the cooperative and the association with workshops and master weavers. Independent households that had excluded themselves from adapting to these organizational innovations had also ended up keeping themselves away from the valuable training that was offered by State-sponsored agencies. The Planning Commission study provided some very interesting revelations regarding the self exclusion of hereditary-weaving independent households who refused to participate in the organizational innovations:

“...out of 1097 sample weaver households, 1068 had no trained member...This means that a very few namely 29 sample households were reported to have been trained under the training programme...On the whole, weavers did not generally take interest in getting themselves trained in the improved methods of weaving... A large majority of weaver households were not even aware of the existence of training programmes...About one third of the households felt considered that the training was *not necessary...they felt that their members engaged in the weaving establishments were already trained because the occupation was hereditary, and as such they did not require any particular training in the industry*” – pp.39-40, GoI (1967), emphasis mine

These revelations demonstrate that those who were willing to absorb the organizational innovation also received enormous financial support from the State and benefited from being at the forefront of design innovation. But these findings also provide a hint as to what the attitudes among some hereditary weaving communities were. Though the Planning Commission survey did not involve Balaramapuram¹⁶, these results give us very interesting leads towards the analysis that follows. The Saliyars were in some sense better than the communities that were surveyed by GoI (1967) since they had adopted some smaller incremental innovations such as mechanization of spinning. But, as detailed below, where they committed the blunder was in had neither participating in

¹⁶ In Balaramapuram, design innovations played a more significant role than technical innovations, unlike in the towns surveyed by the studies such as GoI (1967). Recall that in Balaramapuram the very demand for the product was based on the constancy of its weaving technology, and hence, technical innovations were only very incrementally absorbed whereas most knowledge flows were around the issue of innovation in design.

absorbing and implementing organizational innovations (hence depriving themselves of financial incentives and schemes from the State in the 1960s and 1970s), nor effectively tapping design innovations. Both these exclusions had their roots in homophilous-embeddedness and community cohesion, as we shall see. The sections that follow are based on the illustration in Figure 1.

3.2 The Decline of the Saliyars

According to a few Saliyar elders interviewed for this study, the first cause of the decline of the Saliyars' can be attributed to the fact that their information on design was increasingly becoming redundant from the late 1970s and early 1980s onwards, which happens to coincide with the period that the State and many other bodies were infusing finance and many schemes and programmes into the handloom industry in Kerala.

3.2.1 Redundancy in Design Information

During interviews with Saliyar elders, it was revealed that the Saliyars used to pride themselves on the designs that they came up with and the innovative methods they developed to produce those designs on the final cloth. So much so that Saliyar weavers strove to keep information on these a community secret. They were shared willingly within the community, but kept at close guard so as not to allow them to seep out, until of course, the final product went into the market. In this manner, though a mild and subtle competition existed among weavers within the community for innovative designs and innovative methods of generating those designs on the cloth, there was generally cooperation among Saliyar households to share information once a design had gained approval in the market. There was little input through information from the outside, since community cohesion was strong, and information networks were knotted mostly within the community.¹⁷

This gives us pointers as to how and why redundancy in information began creeping into the Saliyars' information network. Figure 1 illustrates that there are two main reasons why the Saliyars' information networks were plagued by redundant information: exclusion from fresh network links, and refusal to participate in government sponsored training on design. Let us look at the first reason. The exclusion from fresh network links was due to the fact that the Saliyars' intertwined information links were inherited generation after generation and each Saliyar household was locked-in from birth to a network of suppliers, customers and others, who were the chief sources of information on new design. Being a network clan (Bianchi and Bellini, 1991), tradition dictated to them whom to ask and whom to talk to. Interviews with Saliyar elders revealed that the community would frown upon those who abandoned these traditional links, by distancing the deviant individuals during social functions and for production issues. This ensured a rigid network, which over a long term fed into an incapability to access fresh information.

¹⁷ This recalls Burt (1992), who explained that redundancy of information leading to obsolescence is indicated by cohesion and equivalence, which manifest in network structure. Cohesive contacts, being strongly connected to one another, provide the same information repeatedly. Equivalent contacts, connecting an agent to the same third party, also direct the agent to receiving redundant information.

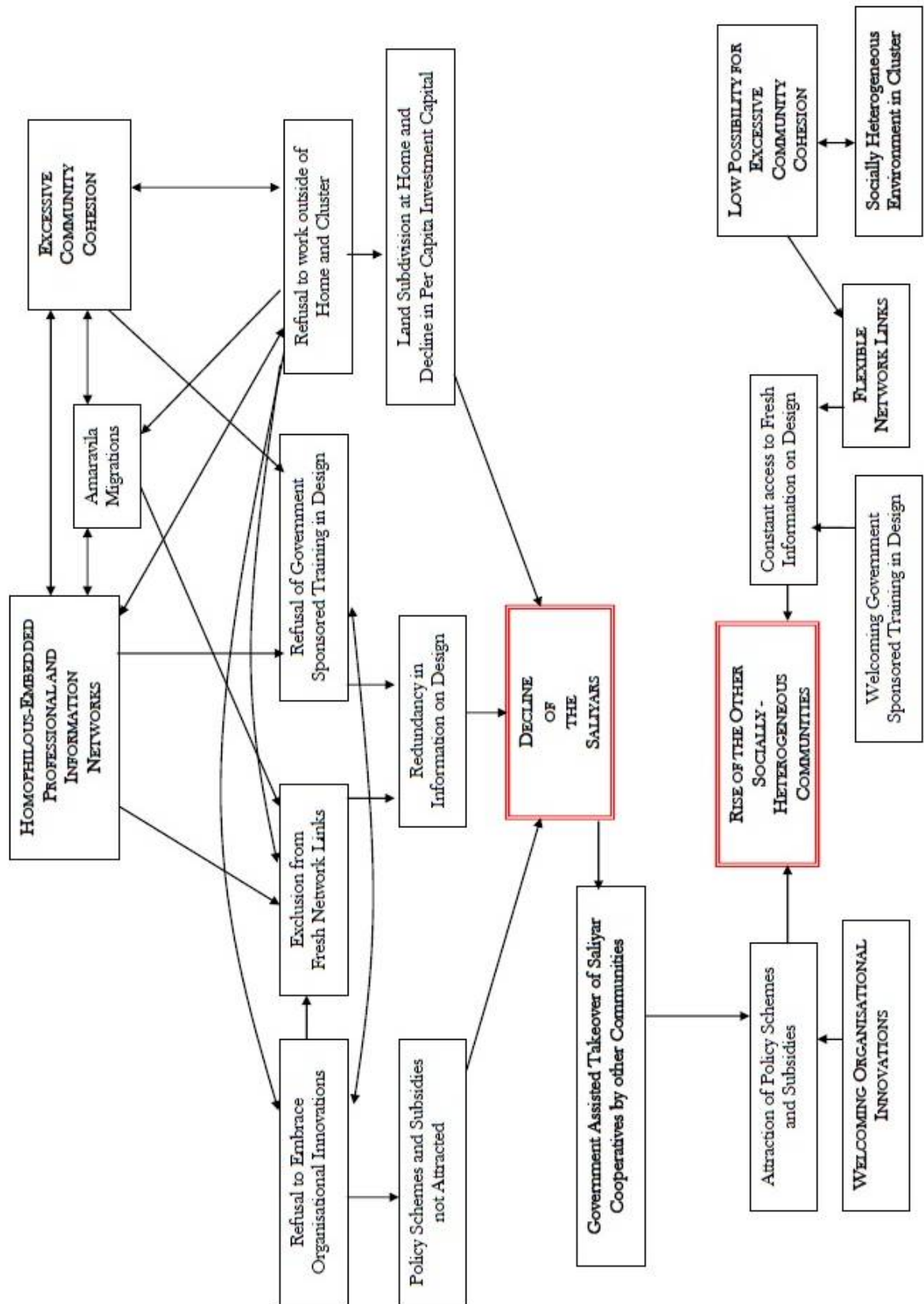


Figure 1 Tracing the Decline of the Saliyars and the Rise of the other Socially-Heterogeneous Communities

The exclusion from fresh network links could have been averted if they had more efficiently utilized the opportunity that they had in migrating to another village called Amaravila in the vicinity of Balaramapuram. Amaravila is a tiny village eight kilometres from Balaramapuram where a few Saliyar families established themselves from the 1970s onwards. This movement was not unidirectional, but to-and-fro, with many families shuttling between Balaramapuram and Amaravila. By the late 1970s, Saliyar families in the Saliyar Cluster at Balaramapuram had begun to suffer from a problem common to agriculture in India – land subdivision. The sense of family, strong among weaver communities in India in general, was particularly deep seated in the Saliyars, so much so that Saliyar children would continue operating in the very household that they grew up in and where their parents wove. With the area of the residence fixed, successive generations suffered from cramped households, and felt the need to move out of the Cluster. When a Saliyar family moved out of the Cluster, they wished to move only in the vicinity of Balaramapuram, and only to places where the community had possibilities to maintain a sense of its own identity and continue its religious and cultural practices. This was achievable where, for example, a temple with a favoured deity existed and where marriage relations were potentially possible with the existing inhabitants of the destination. Amaravila fitted these requirements very well, and so there was migration between this village and the Saliyar Cluster at Balaramapuram. But what went wrong had roots in the same reason.

Amaravila was not an uninhabited village, and had a small number of weavers from various communities. But the Saliyar families that moved to Amaravila were still attached to the home Cluster at Balaramapuram, sharing the same professional and information links. Hence, though there were a few weavers of different communities in Amaravila, the Saliyars preferred to link with other Saliyars in their own home Cluster at Balaramapuram. Links with these resident weavers of other communities, could have at least begun the process of modifying the Saliyars' information network to include more out-of-community links, slowly breaking out of their network rigidity. But the Saliyars missed this opportunity.

The move to Amaravila turned out to be a missed opportunity; it actually seemed to contribute to the inflexibility of the Saliyar network, by virtue of being associated with the same homophilous-embedded networks of the home Saliyar Cluster. Though a location change was undertaken to relieve from land subdivision problems (and could have improved the structure and composition of the information network), the networks remained the same, and so did therefore the information on design. In every sense, the Saliyars found nothing but another location, rather than a new network, to continue their production. In this manner, homophilous-embeddedness and a sense of community cohesion characterized links with Amaravila and fuelled the exclusion of the Saliyars from fresh network links for information on design.

Another exclusion the Saliyars subjected themselves to, was the training given to weavers in Balaramapuram (Kerala in general) by agencies such as the State through training sessions organized by the nearest WSC as described above. This exclusion from training is interconnected with the

refusal to embrace organizational innovations that attracted financial and technical support from the nodal agencies of the State, an issue that we will discuss below. The Saliyars willingly abstained from government sponsored training workshops on design, described in detail in section 3.1, as they had prided themselves on their capability to work as a community to come up with innovative designs and develop the expertise to weave those designs on the cloth. As one Saliyar elder put it:

“...we didn’t need anyone from outside to tell us what to do”¹⁸

Very evidently, this standpoint maintained by the community, supported by social pressures not to participate, stemmed from an extreme sense of community cohesion. Hence, we see that homophilous-embeddedness in the Saliyars’ networks and a sense of intense community cohesion was at the root of redundancy in information and thus impeded innovation on design, which is one reason that fed into the decline of the Saliyars.

3.2.2 Failure to Adopt Organizational Innovations, and attract Policy Schemes and Funds

Another reason for the community’s decline, stemming again from homophilous-embeddedness and community cohesion, was its failure to attract policy schemes and funding assistance from the State. These schemes were an integral part of the State’s assistance to the handloom industry, which, as we have seen, continued for more than thirty years beginning from the mid 1950s and carrying on beyond the mid 1980s. As we have seen, the State had, for a long period, very systematically drawn out welfare schemes for training in design, funds for working capital and for purchase of new looms and other equipment, and substantial financial and technical support for the embrace of organizational innovations such as workshops. For the output that came out of these workshops, usually attached to a cooperative, there were schemes for marketing too. It is in failing to enrol in these ways of functioning and in refusing to embrace certain key organizational innovations that characterized the handloom industry in Balaramapuram, that the Saliyars founded their decline.

Organizational innovations mainly involved the adoption of the work-shed (or workshop), which was attached to local cooperatives, and within which wage labour was employed on numerous looms. Supervision in these work-sheds was supposed to be under a master weaver who may or may not actually weave, and who played more of an administrative and advisory role, including the acquisition of new information on design and linking with the nodal agencies for design, either under the State or other private individuals. The master weaver, as studies have found many a time, was the chief agent in design. But it was revealed during interviews with the Saliyar elders that the work-shed and master weaver arrangements were not really brand new organizational innovations in the true sense of the term as there were similar master weaver and workshop arrangements among the Saliyars (as well as in other weaving communities in the past in India; see section 2.1 on the *karkhanas* of

¹⁸ This is reminiscent of what was found by GoI (1967) in their survey, that many hereditary caste-weaver households did not find the training ‘necessary’, by virtue of handloom textile production being their hereditary profession.

western India).¹⁹ What was new in Balaramapuram was that the new organizational arrangements were completely devoid of any community affiliation, an arrangement which the Saliyars had little agreement with.

There were, until the 1970s, according to Saliyar elders, almost three hundred Saliyar master weavers in the community employing a handful of workers at looms each of their homes. These weaving units with a cluster of looms were located within the Saliyars' homes, and employed labour from amongst the Saliyar community as well as from other communities. However, employees from the Saliyar community outnumbered those from outside by a large majority. Saliyar employees were, naturally, sourced from extended families or to maintain community relations and worked inside the homes of the Saliyar master weavers. But the outsiders were allowed entry to, and operation from, only in the backyard of the Saliyar home, and not within the residence where household members and other Saliyar employees worked. Moreover, employees from the other communities were employed not for weaving, but pre- and post-loom activities, which meant that they were expected to offer little in terms of bringing new information on the crucial element of design. Subdivision of land at home shrunk space at home to operate one's own family's production activities, let alone operate master weaver arrangements, and paying wage-labour became more difficult. These led to the slow disappearance of these Saliyar master weavers. Attempts to set up work-sheds outside of the Cluster (where land was not exactly scarce at the time) were rare, since most Saliyars reportedly did not want to leave the Cluster.

Also, no Saliyar male was known to work for another community's master weaver (for reasons of 'community pride' – this justification cited consistently by those who were interviewed); and the Saliyar women (who were employed at home for pre-loom tasks) were in any case not permitted to work in handloom outside of the house. The Saliyars were very keen on sticking to their own organizational form – the household production unit with family/community division of labour – and their own cooperative societies demarcated along community lines, dense with homophilous-embeddedness.

Due to this sort of an environment in the Saliyar Cluster (and decreasing space at home), it was difficult for the Saliyars to break down their community cohesion in order to accept fully the work-shed form of organization and production. Due to this non-acceptance, they were excluded from the links to the WSC's, in turn the IHT's, the loans and funds from the commercial banks, and the many other policy schemes and programmes. The organizational innovations were simply not adopted, and the Saliyar master weavers receded.

¹⁹ The *karkhanas* of Western India arrived more than a century earlier than in Balaramapuram, for a simple reason. While Balaramapuram was at the time a very small village with a sprinkling of weaver households catering to a local and domestic market, towns in Western India were at the heartland of textile production in the subcontinent, producing for export to Britain and other colonies.

It must be noted that the Saliyars had no qualms about adopting innovations such as electric spinning and winding machines, new forms and variants of dyes and yarn, and other such small incremental innovations in pre- and post-loom processes. This is because these innovations were not at odds with community structure and functioning, and did not expect them to move out of the home and the Cluster. But merely the acceptance of these innovations did not ensure any progress, as the main innovation – the *organizational* change – was the crucial one for survival and sustenance. This major innovation was the one that the Saliyars had backed out of, due to community cohesion. Hence, once again, community cohesion stands out as being at the root of the refusal by Saliyars to adopt organizational innovations (as enthusiastically as the other heterogeneous communities accepted them), leading to a failure in attracting policy schemes and funds.

3.2.3 Land Issues at Home and Around, and Decline of Per Capita Investment Capital

The Saliyars were endowed with large amounts of land when they were invited to Balaramapuram. This included not only their set of streets and their residences, but also large tracts of land spread across a couple of acres around their Cluster. This extra land was for a long time a principal source of finance for investment into the handloom business, and a source of financial security for the family. However, two issues arose as the decades passed: first, the increasing difficulty in employing and financing wage labour to maintain the economic activities operating in the extra tracts of land, and second, the division and sale of sections of land for marriage and dowry related matters. Both these were equally severe factors in depleting the stock of land that the families in this community owned. Other venues of sourcing investment included internal contributions from within the community such as borrowing and lending from relatives and other acquaintances. Banks and other financial institutions were seldom considered a source of investment capital, despite the fact that agriculture and traditional industry such as handloom were targeted with massive financial support by nationalized banks. This meant that from the 1970s onwards there was an eventual diminution of sources for investment into the weaving business, adding to the difficulty in maintaining wage labour at home for weaving, and the eventual closure of Saliyar master weaver units by the early 1980s. These extra tracts of land, if still available to the Saliyars, may have even allowed them to continue, and set up new, master weaver units that might have attracted funds and state-led schemes. But by the time the schemes were developed in Kerala in the late 1960s and mid 1970s, the Saliyars had lost most of their extra tracts of land.

Yet another land related issue, visited earlier, was the subdivision and partitioning of the house to allow successive generations and their families to weave at home. A decrease in per capita land at home meant that per capita production was also falling, followed in turn by a falling per capita investment into weaving, pre-loom, and post-loom activities. Naturally, expansions in weaving activity stopped and then began declining, handloom production among the Saliyars slowly beginning to incline towards pre-loom activities that require little investment and space to expand, compared to

weaving. An extra loom, for instance, took up most of the floor area in one of the large rooms in an already crowded house, whereas an extra spinning machine took up very little space, as all that was needed was a little area on the side of a wall in a relatively smaller room. A yarn shop was easier to expand and the yarn business easier to invest in, given that extra bales of yarn took up very little space and the nature of the commodity's sale was fast moving (requiring less space requirements for inventory), compared to a master weaver arrangement that took up many times the area of an entire yarn shop. An increase in intensity in spinning or other pre-loom activities could have improved the Saliyars' condition, but an expansion in even these activities that required very little space had its own limits in an already small, and increasingly cramped, residence. Subsequent generations would set up loom or spinning wheel in another quarter of their respective homes, this practice naturally reaching a limit within two or three generations. Given that this community was brought to Balaramapuram in the 1890s, one can picture that there would have been, at least two or even three generations in the house by the 1970s actively pursuing weaving and other activities simultaneously, in the same small space of the home. Visits to Saliyar houses even today show that spinning and plying activities that many Saliyar families are engaged in are, literally, jostling for space with day-to-day living arrangements.

All these again point at one root cause – the community cohesion that did not encourage (even if it did not strictly disallow) movement and operation out of the home and outside of the Saliyar Cluster. Movement out of the Cluster only meant towards Amaravila, the problems associated with which we have already covered in the previous discussion.

These three factors – redundancy in information on innovative design, failure to attract state sponsored schemes and funds, and diminishing land and capital – all appear to have their roots in two very characteristic traits or attributes of the Saliyars: homophilous-embedded networks and excessive community cohesion. As we have seen, they are highly interconnected and often overlap on one another. The Saliyars began stagnating slowly by the late 1970s, and a crisis began building-up in the Saliyar Cluster from the early 1980s onwards, intensifying by the late 1980s and through the 1990s, and continuing even to the present day. This has its origins in the unwarranted degree of community centrality displayed by the Saliyars, manifested and fed-back by homophilous-embeddedness in their business and, more importantly, in their information networks. The Saliyars had recognized that their progeny had a choice between, on the one hand, inheriting the same networks, sticking back in the home Cluster with a household form of production organization and family/community division of labour, avoiding tampering with community relations; and on the other hand, to leave weaving and handloom altogether. They seem to have chosen the latter.

3.3 *The Rise of the Other Socially-Heterogeneous Communities*

The depletion of resources for further investment and the redundancy in information on design brought about the stagnation of the Saliyars, and the cooperative societies they were associated with. These Saliyar cooperatives, drawn on community lines, became slow and laggard in operation, many going defunct and existing only on paper by the early 1980s. This is seen clearly in DoH (1986), one of the works that was commissioned by the state government to assess the performance of the schemes listed earlier in this paper, and the performance of the industry as such. DoH (1986) was an effort by the state government to list out in the form of a directory, the primary handloom cooperative societies in Kerala state and their status at the time. In this report it was seen that by 1984 the chief cooperative society of the Saliyars, the ‘Anchuwarnatheruvu HWCS Ltd.’²⁰, was listed as ‘dormant’ (DoH, 1986: 7). What is interesting is that this cooperative society was the *only* one that had a status listed as ‘dormant’, while the multitude of other cooperative societies in Balaramapuram – comprised of socially heterogeneous groups of weavers – were listed as ‘working’.

This dormancy of the Saliyar cooperatives led to the next step – the takeover of these societies by the State and welcoming in associations with weavers who belonged to all communities, not just the Saliyars. The remodelling of these societies was not simply by dissociation with the Saliyar community and entry of the other communities, but by the systematic mediation of the government, playing an active role in reorganising the management of the societies, reworking their functioning and, most important of all, rewiring the networks that they operated on.

This brought about a ‘secularization’ of these cooperative societies, with all communities free to enter and participate. Of course, there were weaver households already in the areas around the Saliyar Cluster long before the Saliyars came in, but these were (according to the Saliyars), only small time weavers and only a sprinkling in number, like any other village or town in India which had a small number of resident weavers. Also, there were a few small cooperatives in Balaramapuram besides the Saliyar cooperatives, but according to the Saliyar elders interviewed, it was mainly after the State’s remodelling and nurturing of the cooperative societies in a big way did the other heterogeneous communities actually progress from being modestly successful to thriving in the business. These other heterogeneous communities of weavers gained access to information from many external sources, and importantly, from the State in its regular training sessions on design. They were subject to the WSC training sessions, links with exporters and other private players, funds and loan arrangements through the handloom development project in Trivandrum in the mid and late 1970s, and many other progressive schemes. However, the taking over the societies was just the initial step and the links with these State schemes was not the principal basis for the sustained rise of the other

²⁰ ‘Anchuwarnatheruvu’ is literally ‘lane of five castes’. The Saliyars were invited to Balaramapuram in the 1890s by the then Maharaja of Travancore, along with a few families from four other Tamil-speaking communities. The main street on which the Saliyars – the most populous and prominent among these communities – were located was known as the ‘lane of five castes’. HWCS is Handloom Workers Cooperative Society.

heterogeneous communities in weaving. The cooperatives that we refer to here also ended up in many quagmires over the decades, but the heterogeneous communities continued to rise and sustain themselves in the business.²¹ Though these linkages and attraction of schemes and programmes boosted their businesses, but their rise was due to two principal factors: the flexibility in information network links and a convivial attitude towards organizational innovations (such as the work-sheds and master weaver form of organization), both of which had roots in the fact that these communities operated in socially very heterogeneous environments which allowed little possibility for excessive cohesion.

The other heterogeneous communities in Balaramapuram, whether as a part of the newly taken-over cooperatives or not, had welcomed the organizational innovations that were supported by the State through funds and training programmes. The State promoted cooperatives of master weaver workshops as a part of its policy on handloom development in Kerala, and the other heterogeneous communities were more inviting towards these programmes. This was one crucial difference between the Saliyar Cluster and, say, the cluster at Payattuville. It was noted even during fieldwork that while the former was characterized by home-based family/community-labour units, the latter was characterized by work-sheds (at home or around the residential area), employing wage labour sourced from the town regardless of caste, paid on a daily-wage basis and attached to the local cooperative. The latter organizational form had drawn support from the State for the purchase of looms for work-sheds, incentives in terms of tax benefits, welfare benefits for workers (those handloom workers attached to cooperatives), infusion of large amounts of working capital through nationalized banks, and many other such schemes. The other heterogeneous communities had far better access to more flourishing domestic and other markets across India thanks to the associations with State administered bodies such as the WSC's, and began supplying to large upmarket showrooms²² in Kerala and India in a capacity far greater than the Saliyars. With these sources and the regular training sessions in design organized by the WSC's, the other heterogeneous communities in Balaramapuram were said to have surged ahead.

These communities, with no restrictions on network links and information sources, enjoyed a flexibility that the Saliyars had eschewed out of community cohesion and rigid networks. The other, heterogeneous, communities had constant access to fresh information on designs and were always up to date on the latest trends in the market. They could associate and dissociate with agents in their networks as they wished, as they had no community or family obligations to bear. They had no

²¹ Recall from Cowan and Kamath (2012) that most registered cooperatives were found in 2001 to exist only on paper: at least 250 out of the 366 listed cooperative societies in Trivandrum district were found to be either non-existent or non-functional (Niranjana and Vinayan, 2001). But despite the cooperatives stagnating, it is the adoption of the workshop and work-shed form of organization, operating under master weavers and having flexible and dynamic information network links (i.e., a welcoming attitude to organizational innovations) that helped sustain these heterogeneous communities, such as in Payattuville, even until today. This is one of the central issues in this section.

²² Recall again the influential information actors (IIA) from Cowan and Kamath (2012).

restrictions keeping them from moving out of their homes and expanding whenever necessary, and no traditions directing them on how to operate their business. To reiterate, even when the handloom cooperatives in Kerala began languishing, these other communities, such as the one studied in Payattuville, enjoyed a prolonged participation in the weaving business thanks to the welcoming attitude towards innovations, especially of the organizational variety, and a flexibility to move.

The machines and loom processes were never very different (they still are not) between the Saliyars and a community such as Payattuville. Both use the same kind of looms (after all, the usage of this weaving technology is the very basis of demand in this industry), the same spinning machines, the same dyes, the same beaming techniques, and so on. The big difference is in organization of production activity and, importantly, network flexibility. Also, a point to bear in mind is that the unit of production remains in and around the home, the household still maintaining its primacy in most cases, even in Payattuville. Master weavers in Payattuville manage their work-sheds or workshops in the vicinity of their homes with considerable family involvement, as they have always done. As we know, the handloom industry is still a household based industry.

The issue in this paper is whether the *networks* were flexible or not, and whether choosing expansion outside of the house and community was accepted by members of the community. A socially-heterogeneous environment, with no community-related baggage, was (and still is) beneficial to maintaining the flexibility of the networks, and also to the possibility of migration outside of the house and the community. The possibility of a dangerous degree of community cohesion, and of homophilous-embedded in production and information networks, is very low in such environments, and was at the root of the rise of the other socially-heterogeneous communities in handloom weaving in Balaramapuram.

4. Conclusion

The Saliyars have found themselves trapped. Though calamities have come and gone in the past in their Cluster, the dilemmas that have sustained and even exacerbated over the last thirty years are worse than those in the years prior to the 1970s or 1980s. There is now too little community-sourced capital to invest among the Saliyars and risks of non-recovery of investment are very high. Diminished land resources have made it difficult to set up new work-sheds, and even if they can be set up elsewhere, there is little source of finance for maintaining employed labour. Also, out-migration of the youth has passed beyond a recoverable point, and most of the youth who could have stayed back at home and attempt to recover business, are gone.

Handloom, and traditional industry in general, has always been infamous for the uncertainties and fluctuations that have often put its workers at grave risk. In fact, historically too, in times of a crisis such as a famine, it has been noted by the literature that weavers were the first to starve (Roy, 1993 and 2002), and hence the first to migrate. Those communities that migrated were found to display an excessive amount of community cohesion and centrality to family; this community and

family spirit assisting and shaping the technology trajectory of Indian handloom. Inherited networks and community social capital buttressed the risks of adoption of new technologies and practices, and invigorated information flows. Community social capital and technological progress went hand-in-hand for the most part in the history of Indian handloom. Due to these trends and characteristics, handloom has gained a reputation as a socio-technology operated by weavers whose mobility in and out of the profession has, according to Mamidipudi et al. (2012), only strengthened their resilience as socio-technologists.

But while for the most part community cohesion has been, historically, congruent to technological progress and knowledge diffusion among community-based weaving clusters and groups in India, in the case of the Saliyars there has been a disharmony. This does not require rethinking of whether or not community social capital and technological progress share a healthy relation. We believe that they still do share such a relation, though only to a limit, after which the detriments of community social capital set in and rigidities associated with inherited networks set in, and hinder knowledge diffusion and technological advancement. The Saliyars are only a counter example to the standard line, and not a case against it.

References

- Arasaratnam, S. (1980) 'Weavers, Merchants and Company: The Handloom Industry in Southeastern India 1750-1790', *The Indian Economic and Social History Review*, 17(3):257-281
- Bianchi, P., and Bellini, N. (1991) 'Public Policies for Local Networks of Innovators', *Research Policy*, 20(5): 487-497
- Borjas, G.J. (1992) 'Ethnic Capital and Intergenerational Mobility', *The Quarterly Journal of Economics*, 107(1): 123-150
- Borjas, G.J. (1995) 'Ethnicity, Neighborhoods, and Human-Capital Externalities', *The American Economic Review*, 85(3): 365-390
- Burt, R.S. (1992) *Structural Holes*, Harvard University Press, Cambridge, MA
- Coleman, J.S. (1988) 'Social Capital in the Creation of Human Capital', *American Journal of Sociology*, 94: S95-S120
- Cowan, R., and Kamath, A. (2012) 'Informal Knowledge Exchanges under Complex Social Relations: A Network Study of Handloom Clusters in Kerala, India', Working Paper 2012-031, UNU-MERIT
- Dasgupta, P. (2005) 'Economics of Social Capital', *The Economic Record*, 81(255): S2-S21
- DoH (1986) *Directory of Primary Handloom Cooperative Societies in Kerala*, Directorate of Handloom, Government of Kerala
- Eapen, M. (1991) 'Hantex: An Economic Appraisal', Working Paper 242, Centre for Development Studies, Trivandrum, India
- GoI (1967) *Study of Handloom Development Programme*, Programme Evaluation Organisation, Planning Commission, Government of India
- GoK (1976) *Economic Review Kerala 1975*, Planning Board, Government of Kerala
- GoK (1978) *Economic Review 1977*, Planning Board, Government of Kerala
- GoK (1986) *Economic Review 1985*, Planning Board, Government of Kerala
- GoK (2011) *Economic Review 2010*, Planning Board, Government of Kerala
- Haynes, D.E. (1996) 'The Logic of the Artisan Firm in a Capitalist Economy: Handloom Weavers and Technological Change in Western India, 1880-1947', in Stein and Subrahmanyam (eds) *Institutions and Economic Change in South Asia*, Oxford University Press, Delhi
- Haynes, D.E. (2001) 'Artisan Cloth-Producers and the Emergence of Powerloom Manufacture in Western India 1920-1950', *Past & Present*, 172:170-198

- Haynes, D.E., and Roy, T. (1999) 'Conceiving Mobility: Weavers' Migrations in Pre-Colonial and Colonial India', *The Indian Economic and Social History Review*, 36(1):35-67
- Mamidipudi, A., Syamasundari, B., and Bijker, W. (2012) 'Mobilising Discourses: Handloom as a Sustainable Socio-Technology', *Economic and Political Weekly*, 47(25): 41-51
- MoC (1974) *Report of the High Powered Study Team on the Problems of Handloom Industry*, Ministry of Commerce, Government of India
- MoT (2012) *Annual Report 2011-2012*, Ministry of Textiles, Government of India
- NCAER (2010) *Handloom Census of India 2009-2010*, National Council for Applied Economic Research, Government of India, New Delhi
- Niranjana, S., and Vinayan, S. (2001) 'Report on Growth and Prospects of Handloom Industry', Study Commission by the Planning Commission, India
- Roy, T. (1993) *Artisans and Industrialization: Indian Weaving in the Twentieth Century*, Oxford University Press, Delhi, New York, and UK
- Roy, T. (1996) 'Introduction', in *Cloth and Commerce: Textiles in Colonial India*, Sage Publications, New Delhi, Thousand Oaks, London
- Roy, T. (1999) *Traditional Industry in the Economy of Colonial India*, Cambridge University Press, UK
- Roy, T. (2002) 'Acceptance of Innovations in Early Twentieth Century Indian Weaving', *The Economic History Review*, 55(3):507-532
- Venkataraman, K.S. (1935) *The Hand-Loom Industry in South India*, Supplement to the Madras University Journal, Madras, India
- Walker, G, Kogut, B. and Shan W. (1997) 'Social Capital, Structural Holes and the Formation of the Industry Network', *Organization Science*, 8(2): 109-125
- Wintrobe, R. (1995) 'Some Economics of Ethnic Capital Formation and Conflict', in Breton et al. (eds.) *Nationalism and Rationality*, Cambridge University Press, UK

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